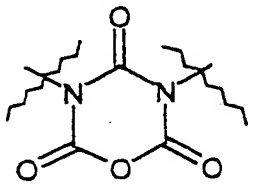
WHAT IS CLAIMED IS:

1. A process for producing a polyisocyanate or a polyisocyanate secondary product containing at least one allophanate group, which carries at least one acrylate, methacrylate or vinyl ether double bond on the oxygen atom of the allophanate group, said oxygen atom being bound by two single bonds, comprising the step of reacting a polyisocyanate or a polyisocyanate secondary product containing at least one oxadiazinetrione group (formula 1)



Formula 1

with an alcohol containing an acrylate, methacrylate or vinyl ether double bond at temperatures of from –20 to 100°C.

2. The process according to Claim 1, wherein the reaction takes place in the presence of a basic catalyst.

3. The process according to Claim 2, wherein the catalyst has a pKa > 7.5.

4. The process according to Claim 2, wherein the catalyst contains an amine.

5. The process according to Claim 1, wherein the reaction is performed in the presence of at least one stabiliser.

6. The process according to Claim 1, wherein the reaction is performed in the presence of 2,6-di-tert.-butyl-4-methyl phenol.

7. The process according to Claim 1, wherein the polyisocyanate containing an oxadiazinetrione group is produced from 1,6-hexamethylene diisocyanate.

8. The process according to Claim 1, wherein the polyisocyanate carries free isocyanate groups or capped isocyanate groups.

9. The process according to Claim 1, wherein the reaction is performed in the presence of a further polyisocyanate or a polyisocyanate secondary product having 0.1 to 10 wt.% uretdione groups.

10. The process according to Claim 1, characterised in that a polyfunctional alcohol is additionally used.

11. A polyisocyanate or polyisocyanate secondary product produced by the process according to Claim 1.

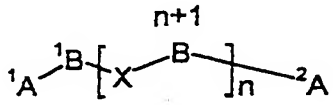
12. A polyisocyanate mixture or mixture of polyisocyanate secondary products containing a) a polyisocyanate or a polyisocyanate secondary product with at least one allophanate group, which carries at least one acrylate, methacrylate or vinyl ether double bond on the oxygen atom of the allophanate group, said oxygen atom being bound by two single bonds, and b) a polyisocyanate or a polyisocyanate secondary product with 0.1 to 10 wt.% uretdione groups relative to the total polyisocyanate mixture or mixture of polyisocyanate secondary products.

13. The polyisocyanate mixture or mixture of polyisocyanate secondary products according to Claim 12, wherein the polyisocyanate or mixture of polyisocyanate secondary products b) contains unsaturated groups.

14. The polyisocyanate mixture or mixture of polyisocyanate secondary products according to Claim 12, wherein a polyisocyanate or a polyisocyanate secondary product c) is additionally included, which carries uretdione and allophanate groups.

15. The polyisocyanate or polyisocyanate secondary product according to Claim 11 containing a stabiliser selected from the group comprising phenols, HALS amines or phenothiazines.

16. The polyisocyanate or polyisocyanate secondary product according to Claim 12 containing structural elements having formula 2



Formula 2

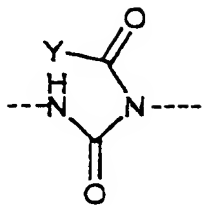
wherein

^{1}A and ^{2}A represent isocyanate or isocyanate secondary products containing iminooxadiazinedione, isocyanurate, uretdione, urethane, allophanate, biuret, urea or oxadiazinetrione structures and carrying the radicals ^{1}B to ^{n+1}B cited below in N position,

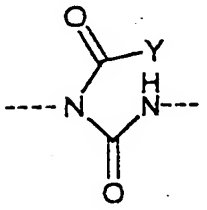
^{1}B to ^{n+1}B represent the same or different radicals produced by modelling the two isocyanate groups of an aliphatic, cycloaliphatic or araliphatic diisocyanate,

X represents one of the structures X-1 and/or X-2,

and optionally small amounts of the same or different radicals of isocyanate secondary products containing iminooxadiazinedione, isocyanurate, uretdione, urethane, allophanate, biuret, urea or oxadiazinetrione structures,



Structure X-1



Structure X-2

Y represents an organic radical containing at least one activated double bond;

n is a number greater than one and less than 20 and represents the mean of all molecules having formula 2 present in the compound according to the invention.

17. A composition selected from coating compositions, adhesive compositions, curing composition systems, and sealing compositions containing compounds produced by the process according to Claim 1.

18. Substrates having a coating containing a reaction product of the polyisocyanate mixture or the mixture of polyisocyanate secondary products according to Claim 11.

19. Substrates according to Claim 18, wherein the substrate material comprises one or more of wood, metal, plastic and mineral substances.

20. The polyisocyanate or polyisocyanate secondary product according to Claim 12 containing a stabiliser selected from the group comprising phenols, HALS amines or phenothiazines.

21. Substrates having a coating containing a reaction product of the polyisocyanate mixture or the mixture of polyisocyanate secondary products according to Claim 12.